REMARKS

This amendment is filed in response to the Office Action dated October 20, 2006. In that Action, the Examiner rejected Claims 7, 9-17 and 19-20 under 35 U.S.C. §102(b) as being anticipated by Armangau. Claim 8 was rejected under 35 U.S.C. §103(a) as being unpatentable over Armangau in view of Romer. Claim 18 was rejected under §103(a) as being unpatentable over Armangau in view of Evans. Claims 1-6 were allowed.

With regard to the §102(b) rejections, Applicants would respectfully submit that Armangau does not anticipate the present invention because that reference fails to teach a memory controller that directs the copying of memory pages from an old memory mapping to a new memory mapping. Armangau is directed to a data storage system that permits continued host read/write access. The problem addressed by Armangau relates to backing up and restoring data, i.e., in the case of a data loss. In order to provide a system that can frequently back up data and rapidly restore data after a storage system failure, Armangau uses a pointer technique to allocate tracks in a snapshot copy volume of a production data set. The snapshot copy volume constitutes a backup version of the production data set.

Applicants' invention, in contrast, has nothing to do with restoring data after a storage system failure. The memory superpage coalescing that is performed by the present invention is not data back up or data restoration. Rather, Applicants' invention moves data from one or more sections of a computer's system memory to another section of memory. More generally, Armangau is not even directed to a memory controller, since the data storage system is different from the system memory used in a data processing system. Figure 1 in the present application illustrates the construction of a typical prior art computer system. The program instructions and operand data which are used by the processing unit(s) are located in system memory, designated as reference numeral 16. Memory 16 is a high-speed random-access memory which loads the program instructions and operand data from a permanent data storage device. As described in Applicants' specification at page 1, lines 11-17, the permanent storage device is one of the input/output devices of the computer system, designated as reference numeral 18, e.g., a "hard drive" or magnetic disc.

The distinction between system memory and a storage device is not only described in Applicants' specification but further is well-understood in the art. System memory is volatile and is reset (zeroed out) when there is a system restart, while the storage device is non-volatile and retains data even when the system is powered down. While it makes sense to back up the data storage device, it is unnecessary to provide a backup for system memory so one skilled in the art would not understand Armangau to refer to Applicants' inventive subject matter. The analogy of Armangau's data storage system to a memory controller is therefore not only unfounded but is further contrary to common understanding. The analogy also breaks down upon further examination of the explicit recitations in Applicants' Claims 7 and 14. Claim 7 discusses "remapping instructions" and both claims recite corresponding "old page addresses" and "new page addresses." The Office Action compares a "back command" (sic) to the remapping instructions, but as explained above the remapping instructions are instructions that move memory pages, not instructions that cause data to be backed up. The recitation in Claim 7 that entries in the mapping table are released as copying is completed also indicates that the pages are being moved, not backed up. Finally, the Office Action fails to identify how the primary directory of the data storage device of Armangau stores old page addresses and corresponding new page addresses. In Armangau there are no "old" or "new" memory page addresses. Since Armangau does not teach each and every element of Applicants' claims, it accordingly cannot anticipate the present invention.

The foregoing arguments also apply to the §103(a) rejections inasmuch as each of those rejections is primarily based on Armangau. The proposed combinations of Armangau with Romer or Evans still does not result in a memory controller that directs the copying of memory pages from the old page addresses to the new, remapped page addresses, so the proposed combinations cannot render the present invention obvious.

Notwithstanding the foregoing, Applicants have amended Claim 7 to recite that the memory access device directs the copying of memory pages from the old page addresses to the new page addresses while handling access operations which use the new page addresses and that the remapping instructions are for a virtual superpage. This language is essentially the same as the feature of Claim 1 which was indicated as imparting patentability. A similar amendment has been made to Claim 14. These amendments serve to further distinguish Applicants' invention

from the cited references. For all of the foregoing reasons, Applicants respectfully request reconsideration of the §102(b) and §103(a) rejections.

Applicants have also deleted the previously withdrawn Claims 21-23, and are submitting herewith a Terminal Disclaimer to support the previously filed Disqualifying Statement pursuant to 37 C.F.R. §1.130(a)(1). Please charge the fee of $130.00 due under 37 C.F.R. §1.20, and any additional required fees, to deposit account number 09-0447.

Applicants have made a diligent effort to advance the prosecution of this application by deleting claims, amending others, and by pointing out with particularity how the claims as presented patentably define the invention over the prior art. In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the examiner is requested to telephone the undersigned.

Respectfully submitted,

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